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T.O. 1*

August 3, 1959

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The following are comments extracted from [redacted] concerning Gene's visit of July 27 and 28, 1959 which may be of interest:

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MR-1

The MR-1 was reassembled with the painted panel early on 28 July 1959. A motor rotor of the new configuration was included in the assembly. Preliminary tests showed poor motor performance. Because of the new rotor, the motor was naturally suspected of being the cause of the trouble. The true difficulty (an open circuit in one-half of one of the push-pull driver amplifiers) was not discovered until after Gene had left. He was pleased with the appearance of the recorder and case.

Although the motor with the new rotor is self-starting alone, it does not have sufficient pull-in torque to sync when loaded by the transport. About 50% more power from a higher voltage supply and a ball bearing on the top end of the motor would make the motor self-starting in the recorder. The above is not feasible at the present time in the MR-1, and therefore a starter motor is still necessary.

MR-2

Gene said he would expedite a deficiency report on this unit.

MR-3

Gene witnessed tests concerned with mating the motor to the transistor amplifiers. No definite conclusion was reached in this work, but the possible necessity of adding two more battery cells (making a total of ten cells), in order to operate the transistors over a more favorable dynamic range, was discussed. The extra cells may also be required to obtain reasonable battery running time. The deeper case was approved by Gene if necessary.

IR-105

The IR-105 was discussed in a very general way. Gene was shown our first experimental motor design for which laminations and double outer race ball bearings are on order. Gene stated that a future requirement would very likely be for a seven-track instrument and that, if possible, we should leave room for the additional amplifiers. Also, the transport should be easily converted to one-half inch tape.

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Cordially yours,

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